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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RICHARD MARTIN JACOBSON, MARTHA JEAN KELLY, and  
WILLIAM NIXON JAMES JR.

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Appeal 2009-003022  
Application 10/630,282  
Technology Center 1600

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Decided: February 1, 2010

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Before DONALD E. ADAMS, ERIC GRIMES, and  
FRANCISCO C. PRATS, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

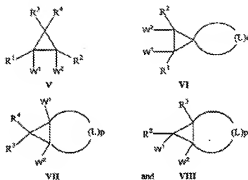
DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 2-4. Pending  
“claims 1 and 5 to 8 hav[e] been withdrawn from consideration” (App. Br.  
2). We have jurisdiction under 35 U.S.C. § 6(b).

# STATEMENT OF THE CASE

The claims are directed to a cyclopropane compound. Claim 2 is illustrative:

2. A cyclopropane compound selected from the group consisting of:



wherein:

- a) each  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  is independently a group of the formula:  
 $-(L)_n-Z$

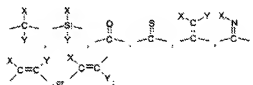
i) p is an integer from 3 to 10;

q is an integer from 4 to 11;

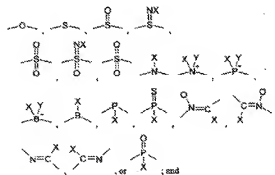
n is an integer from 0 to 12;

- ii) each L is independently selected from a member of the group D, E, or J[;]

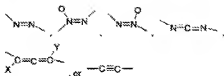
D is of the formula:



E is of the formula:



J is of the formula:



A) each X and Y is independently a group of the formula:  
 $-(L)_m-Z;$

and

B) m is an integer from 0 to 8; and

C) no more than two E groups are adjacent to each other and no J groups are adjacent to each other;

iii) each Z is independently selected from:

A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or  
 B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; carbocyclic or heterocyclic ring system wherein;

- 1) when the ring system contains a 3 or 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;
- 2) when the ring system contains a 5, or more, membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;
- 3) each heteroatom is independently selected from N, O, and S;
- 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;

- b)  $W^1$  and  $W^2$  are selected from F, Cl, Br, I, alkoxy, acyloxy, alkoxycarbonyloxy, aminocarbonyloxy, alkylaminocarbonyloxy, dialkylaminocarbonyloxy, alkylsulfonyloxy, and arylsulfonyloxy;  
 c) provided that at least one of  $W^1$  and  $W^2$  is I; and  
 d) the total number of non-hydrogen atoms is 50 or less.

The Examiner relies on the following evidence:

Baird et al., *The Preparation and Lithiation of 1-Halogenocyclopropenes*, 1 J. CHEM. SOC. PERKIN TRANS. 1845-1853 (1986).

The rejection presented by the Examiner follows<sup>1</sup>:

Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Baird.

We affirm.

## ISSUE

Have Appellants established error in the Examiner's prima facie case of obviousness?

## FINDINGS OF FACT

FF 1. The Examiner finds that "Baird teaches structurally similar cyclopropane derivarives [sic] containing halogens and halogens include F, CL [sic], Br and I" (Ans. 3).

FF 2. The Examiner finds that Baird differs from Appellants' claimed invention by teaching "a limited genus containing halogen substituted cyclopropanes" (Ans. 4).

FF 3. The Examiner finds that Baird does not teach iodoinated cyclopropanes (*see id.*).

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<sup>1</sup> The Examiner withdrew the obviousness-type double patenting rejections and the rejection under 35 U.S.C. § 103(a) over Seyferth (Ans. 2-3).

FF 4. The Examiner finds that “halogens belong to the same group in the periodic table (VII group) and [are] expected to possess similar properties” (*id.*).

FF 5. The Examiner finds that Appellants have not established “any criticality or advantages [of] . . . selecting iodo over other halogens” (*id.*).

#### PRINCIPLES OF LAW

“[T]he [E]xaminer bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden. *See Ex parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential); *Ex parte Fu*, 89 USPQ2d 1115, 1118 and 1123 (BPAI 2008) (precedential).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). It is proper to “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418. *See also id.* at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”). In sum, the “suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006).

Thus, when identifying a reason for modifying a prior art compound under *KSR*, “it is sufficient to show that the claimed and prior art

compounds possess a ‘sufficiently close relationship . . . to create an expectation,’ in light of the totality of the prior art, that the new compound will have ‘similar properties’ to the old.” *Eisai Co. Ltd. v. Dr. Reddy’s Labs., Ltd.*, 533 F.3d 1353, 1357 (Fed. Cir. 2008) (quoting *Aventis Pharma Deutschland GmbH v. Lupin, Ltd.*, 499 F.3d 1293, 1301 (Fed. Cir. 2007) (quoting *In re Dillon*, 919 F.2d 688, 692 (Fed. Cir. 1990))). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* at 417. Moreover, an “[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297, 301 (CCPA 1982).

The reason to modify the prior art does not have to be the same as Appellants’. See *In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996) (“the motivation in the prior art to combine the references does not have to be identical to that of the applicant to establish obviousness.”).

Arguments not made are waived. See 37 C.F.R. § 41.37(c)(1)(vii).

## ANALYSIS

The claims have not been argued separately and therefore stand or fall together. 37 C.F.R. § 41.37(c)(1)(vii). Claim 2 is representative.

Based on the foregoing facts (FF 1-5) the Examiner concludes that it would have been prima facie obvious to one skilled in the art at the time of Appellants’ invention to prepare cyclopropane compounds wherein the halogen substituent is any halogen, including iodine, “because halogens

belong to the same group in the periodic table (VII group) and [are] expected to possess similar properties” (Ans. 4). We find no error in the Examiner’s reasoning.

Appellants contend that since Baird teaches compounds that are to be used for a different purpose than Appellants’ and exemplifies the use of bromine and chlorine rather than iodine, claim 2 is not obvious over Baird (App. Br. 15-16). We are not persuaded.

Appellants provide no persuasive reason or evidence to support a conclusion that a person of ordinary skill in this art would not have recognized that any halogen, including iodine, may be selected from the small genus of known halogens to prepare Baird’s compounds with the expectation that an iodinated compound would exhibit similar properties to Baird’s exemplified brominated and chlorinated compounds. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. With regard to Appellants’ contention regarding Baird’s motivation being different from Appellants’, we note that the reason to modify the prior art does not have to be the same as Appellants’. *See In re Kemps*, 97 F.3d at 1430.

#### CONCLUSION OF LAW

Appellants failed to establish error in the Examiner’s prima facie case of obviousness. The rejection of claim 2 under 35 U.S.C. § 103(a) as unpatentable over Baird is affirmed. Claims 3 and 4 fall together with claim 2.



Appeal 2009-003022  
Application 10/630,282

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

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